

REMARKS

This application has been amended so as to place it in condition for allowance at the time of the next Office Action.

The Office action rejects claims 13, 21-22, 25-27, 34, and 37-38 under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,605,685 by Momose et al., in view of US Patent Pub. No. 2003/0054219 by Won et al. and US Patent Pub. No. 2004/0106044 by Kerres. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

The Office action takes the position that "Momose discloses a method for preparing a membrane to be assembled in a membrane electrode assembly, comprising the step of swelling an ion-conducting membrane coated with an ionically conducting polymeric phase, such as Nafion® membranes, in a liquid containing at least one solvent by controlling the content of solvent in the ion-conducting membrane (example 1 and column 5, lines 35-50)."

Applicant respectfully suggests that the method described by Momose et al. neither comprises a swelling step nor discloses an ion conduction membrane during the swelling step impregnated with an ionomer. In particular, the dipping of the film offered by any example of Momose et al. does not contribute to the swelling. Instead, the dipping of the film merely forms a test for determining the oxidation stability of the membrane. For that

reason, the solution into which the membrane is dipped comprises hydrogen peroxide and Mohr's salt, which is a corrosive ferrum containing salt (see the description at the end of each example). Therefore, Momose et al. is not only silent with regard to drying the membrane after the swelling step, but also as to the coincidental impregnation of the ion conduction membrane with the ionomer.

Further, Won et al. does not impregnate the ion conduction membrane with an ionomer but with a barrier material, which is preferably natural clay or organic clay (see paragraph [0033]). Therefore, Won et al. reinforces the bulk of the ion conducting membrane and does not manipulate/improve the conduction properties of the ionomer-impregnated membrane in order to adapt the interface of the membrane versus the electrodes to required conductivity properties. Therefore, Won et al. does not supplement the teaching of Momose et al. to impregnate the ion conducting membrane with an ionomer prior to the drying step.

Finally, the tertiary Kerres reference discloses a method for building a ion conducting membrane. Paragraph [0047] describes in particular the step of "cooking" the membrane. The membrane does not exist prior to evaporating the content of the solvent. After this evaporation, the membrane is glued to the

glass-plate and can only be removed from the glass-plate after immersing the dried membrane in water. After this, the film peels off the glass-plate.

Therefore, the drying of Kerres has the purpose of generating the basis membrane which has to be immersed into water subsequently in order to further process the membrane, as described in paragraph [0047]. For that reason, Kerres cannot reasonably be combined with the other references to suggest the claimed method since the drying of Kerres has a completely different purpose and is done with completely different materials. Namely, in the Kerres method precursors of the membrane are assembled to a membrane. In sharp contrast, in the claimed method a radiation grafted membrane is impregnated with an ionomer and subsequently dried to fix the ionomer to the radiation grafted membrane.

For these reasons, Applicant respectfully suggests that the combination of applied references would not lead one of skill in the art to arrive at the present method as recited in any of the present claims in the absence of the teachings of the present application, because the three references do not relate in a logical way to that which is claimed.

For the purpose of clarifying the differences between the present method and the teachings of the applied references, Applicant has amended each of independent claims 13 and 21. As the applied references cannot reasonably be construed as teaching or suggesting the method now claimed in amended claims 13 and 21, and by extension all claims that depend therefrom, reconsideration and withdrawal of this rejection are respectfully requested.

The Office action rejects the following claims under 35 U.S.C. 103(a) as unpatentable over the same references of Momose et al., in view of Won et al. and Kerres, and further in view of the identified additional references: claims 14-16, 19, 29, 31, and 36 further in view of US Patent No. 5,656,386 by Scherer et al.; claims 17 and 20 further in view of US Patent Pub. No. 2004/0062970 by Nomura; and claims 23-24, 28, 32-33, and 35 further in view of US Patent Pub. No. 2004/0115499 by Tani et al.

Each of such claims depends ultimately from one of amended independent claims 13 and 21, each of which is considered in detail in connection with the obviousness rejection discussed above. While the added secondary references may offer the particular feature or features for which they are specifically offered, they nevertheless fail to overcome the shortcomings of the Momose et al., Won et al., and Kerres references.

In light of the present amendment and analysis presented above, Applicant believes that the present application is in condition for allowance, and an early indication of the same is respectfully requested.

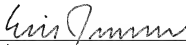
Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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